

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the present amendments and following discussion, is respectfully requested.

Claims 1-13 and 15-23 are pending. Claims 18 and 19 are withdrawn. Claims 1 and 18 are amended, and support for the amendments to Claims 1 and 18 is self-evident. No new matter is added.

In the outstanding Office Action, Claim 1 was objected to for informalities. Claims 1-13, 15-17, and 20-23 were rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Claims 1-11, 15-17, and 20-23 were rejected under 35 U.S.C. § 103(a) as obvious over Verger et al. (PCT Patent Pub. WO 03/060370, herein "Verger") in view of Metcalfe (PCT Patent Pub. WO 98/42947, herein "Metcalfe").

Regarding the objection to Claim 1 for informalities, Claim 1 is amended in accordance with the suggestions in the outstanding Office Action. Accordingly, Applicants respectfully submit that the objections to Claim 1 are overcome.

Indefiniteness Rejections

Regarding the rejection of Claim 1 as indefinite, that rejection is respectfully traversed by the present response. Regarding the meaning of the term "joint efficiency" in Claim 1, there is a sleeve of the **female/female** type. As noted in the outstanding Office Action, the specification, page 3, lines 26-27, defines the **common portion** of the tube as being "the central portion remote from its two ends and having a substantially constant diameter."

The **efficiency of the joint** is the ratio between the critical section of the threaded elements and the section of the tube, see page 10, lines 14-16 of the specification. In other words, efficiency relates to "the critical section of the **threaded elements**" not the critical

section of the sleeve. Thus, the "critical section" refers to the "elements" as defined in Claim 1, namely the first tubular element and the second tubular element. In other words, **the "critical section" is the smallest section of the threaded part of the joint, where the joint comprises male and female parts.**

Accordingly, the recited "efficiency" is

$$\frac{[\text{critical section of } \textit{threaded elements}]}{[\text{section of the tube}]}$$

Applicants point out that the efficiency is not defined as being the ratio between the critical section of the joint and the section of the tube. The passage of page 10, line 10 does not give a definition of what is a "critical section." It only makes a comparison with the "critical section" of the joint and not of the "elements" as defined in Claim 1. As a consequence, using the passage on page 10, line 10 for a definition of "critical section" leads to an error in calculating the efficiency.

For clarification, additional documents in the art are provided in which efficiency is also defined (please see U.S. 5,415,442 and in the VAM CONNECTION DATA SHEETS MANUAL herein enclosed).

Accordingly, Applicants respectfully submit that the rejection of Claim 1 and any claims depending therefrom as indefinite is overcome.

Obviousness rejections

Regarding the rejection of Claims 1-11, 15-17, and 20-23 as obvious over Verger in view of Metcalf, that rejection is respectfully traversed by the present response.

Claim 1 recites, in part:

said second tubular elements form two opposing ends of a female/female connection sleeve, separated by **a central portion initially provided, over an outer surface, with an annular zone having an initial reduced thickness selected such that the section of the sleeve in**

the region of this zone is greater than or equal to the product of the section of a common portion of said tubes and the efficiency of the joint, each second abutment surface rests against the corresponding third abutment surface and/or in that each first abutment surface rests against the corresponding fourth abutment surface,

Thus, the thickness of the central portion is selected such that the section of the sleeve in the region of this zone is greater than or equal to the product of the section of a common portion of the tubes and the efficiency of the joint.

Verger does not disclose a female/female sleeve as recited in Claim 1. Verger concerns an integral connection, i.e., tubes with a male end and a female end. The next to last paragraph on page 11 of the Office Action appears correct. Further, Verger is silent regarding the initial reduced thickness and its determination with regard to the product of the section of a common portion of said tubes and the efficiency of the joint.

The assembly of Verger has an expansion behaviour very far from that of the assembly recited in Claim 1, due to the above noted differences. The claimed features produce a decrease of the expansion pressure and efforts, produce a control of the deformation of the abutment surfaces and sealing surfaces of the assembly, while letting a rectilinear shape after expansion, see page 11, paragraph 2.

Applicants respectfully submit that a person of ordinary skill in the art would not look to Metcalf, which does not handle the problems related to sealing and of make up torque, to remedy the deficiencies of Verger with respect to Claim 1.

Furthermore, Metcalf describes a sand filter that would not be considered "tight" by a person of ordinary skill in the art.

In this regard, the differences between Claim 1 and Verger cannot reasonably be found in Metcalf since a person of ordinary skill in the art would not have considered a tubular assembly having slotted tubes according to Metcalf for combination, as asserted in the outstanding Office Action, with Verger. Rather, a person of ordinary skill in the art

would understand that slotted tubular assemblies have an expansion behaviour which is specific to the slots since the slots must be enlarged during expansion. The problems addressed by the assembly recited in Claim 1 and discussed in the specification are not suggested in Metcalfe, and Metcalfe and Verger diverge from each other on this point.

Metcalfe endeavors to solve a different problem, i.e., obtaining the same expansion behaviour for the various critical zones of the sleeve and of the tubes. Verger and Metcalfe are not reasonably combinable as asserted in the outstanding Office Action. Even if a person of ordinary skill in the art would have read Metcalfe, he would have immediately understood that the particular thickness of Metcalfe in the central zone of the sleeve is interesting only for arranging together slotted tubes since it is indicated that such thickness makes the expansion easier in the overlapping zones between the slots that are most deformed, see Metcalfe at page 9, lines 7-12. In such slotted tubes, this particular thickness is specifically designed to obtain the same expansion behaviour of the critical zones of the joint: the nodes (34) must be placed in one or several zones having the same thickness than the tube, namely, in the embodiment of Figure 2 of Metcalfe, the intermediary or central part of the sleeve. This is a teaching specific to the **slotted** tube assembly, and it would not have been transferred to a **tight** tube assembly by a person of ordinary skill in the art, as asserted in the outstanding Office Action, at the time the invention recited in Claim 1 was made.

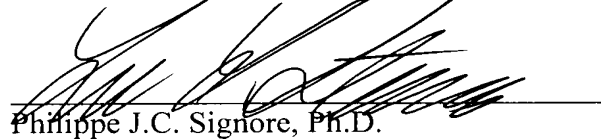
Moreover, Metcalfe is silent about the efficiency of the joint, therefore Metcalfe is silent about the product of the section of a common portion of the tubes and the efficiency of the joint. Such parameters are of no concern in Metcalfe. The assembly of Metcalfe is designed for the bottom of an oil well. The assembly of Metcalfe does not bear all the weight of the tube. On the contrary, the casings or tubings with the assembly of Claim 1 can bear the tensile effort due to the weight of the drill string part located below.

Finally, there is no apparent reason that would have led a person of ordinary skill in the art to incorporate features of Metcalf in an assembly according to Verger with the aim of improving the performances of the sealing means of Verger. Rather, the configurations of these references are unrelated to each other. Therefore, a person of ordinary skill in the art reading Verger would not have found it obvious to modify Verger to incorporate features from Metcalf to produce the assembly recited in Claim 1 or any of the claims depending therefrom.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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